We claim:

1. A radio transmitter comprising:

a frequency shift keying (FSK) coding logic circuit;

a first digital-to-analog converter (DAC) coupled to a first output of the coding logic circuit and a second DAC coupled to a second output of the coding logic circuit;

a first filter coupled to the first DAC and a second filter coupled to the second DAC;

a first mixer coupled to the first filter and a second mixer coupled to the second filter; and

a summing device that combines an output of the first mixer and an output of the second mixer, providing a modulated output signal;

wherein the coding logic circuit is operable to receive digital input data at a rate determined by an operating signal frequency;

wherein the coding logic circuit is further operable to generate a digitally encoded first periodic signal based on the digital data input and to provide the digitally encoded first signal to the first DAC;

wherein the coding logic circuit is further operable to generate a digitally encoded second periodic signal and to provide the digitally encoded second signal to the second DAC when amplitude of the digital input data corresponds to a first level;

wherein the coding logic is further operable to generate a digitally encoded third periodic signal and to provide the digitally encoded third signal to the second DAC when amplitude of the digital input data corresponds to a second level;

wherein the first mixer is operable to receive a fourth signal substantially shaped like the second signal, and to multiply the fourth signal with data signal received by the first mixer from the first filter;

wherein the second mixer is operable to receive a fifth signal substantially shaped like the first signal, and to multiply the fifth signal with data signal received by the second mixer from the second filter;

wherein the first signal is substantially equal to the second signal shifted by a determined phase angle; and

wherein each DAC is configured to generate a non-linear output.

2. The radio transmitter of claim 1, further comprising:

a phase-locked loop (PLL);

a voltage-controlled oscillator (VCO) coupled to the PLL; and

a crystal element coupled to the PLL;

wherein the VCO is operable to generate the fourth signal and the fifth signal.

3. The radio transmitter of claim 1, wherein the third signal is substantially equal to the negative of the second signal.

4. The radio transmitter of claim 1, wherein the second signal is substantially shaped like a sine wave.

5. The radio transmitter of claim 1;

wherein the digitally encoded first signal is Gray-coded;

wherein the digitally encoded second signal is Gray-coded; and

wherein the digitally encoded third signal is Gray-coded.

6. The radio transmitter of claim 5;

wherein each output level produced by the first DAC is obtained from a first set of current sources, and each output level produced by the second DAC is obtained from a second set of current sources ; and

wherein the output levels for each respective DAC are Gray-coded.

7. The radio transmitter of claim 1, wherein each output level produced by the first DAC is obtained from a first set of current sources, and each output level produced by the second DAC is obtained from a second set of current sources.

8. The radio transmitter of claim 1, further comprising:

a power amplifier configured to receive the modulated output signal; and

a loop antenna coupled to the power amplifier;

wherein the power amplifier is operable to amplify the modulated output signal; and

wherein the loop antenna is operable to transmit the amplified modulated output signal.

9. A method for FSK modulation and data transmission, the method comprising:

receiving a digital data input;

generating a digitally encoded first periodic signal;

generating a digitally encoded second periodic signal when amplitude of the digital data input corresponds to a first level;

generating a digitally encoded third periodic signal when amplitude of the digital data input corresponds to a second level;

converting the digitally encoded first periodic signal into the first periodic signal and filtering the first periodic signal;

converting the digitally encoded second periodic signal into the second periodic signal and filtering the second periodic signal;

converting the digitally encoded third periodic signal into the third periodic signal and filtering the third periodic signal;

generating a fourth signal and multiplying the filtered first periodic signal with the fourth signal, resulting in a first mixed signal;

generating a fifth signal and multiplying the filtered second periodic signal and the filtered third periodic signal with the fifth signal, resulting in a second mixed signal;

summing the first mixed signal and the second mixed signal, resulting in a modulated output signal;

wherein the fourth signal is substantially shaped like the second periodic signal, and the fifth signal is substantially shaped like the first periodic signal; and

wherein the first periodic signal is substantially equal to the second periodic signal shifted by a determined phase angle.

10. The method of claim 9, wherein the third analog periodic signal is substantially equal to the negative of the second analog periodic signal.

11. The method of claim 9 further comprising amplifying the modulated output signal.

12. The method of claim 9;

wherein said generating the fourth signal is performed by a VCO; and

wherein said generating the fifth signal is performed by the VCO.

13. The method of claim 9;

wherein said converting the digitally encoded first periodic signal is performed by a first DAC; and

wherein said converting the digitally encoded second periodic signal and said converting the digitally encoded third periodic signal is performed by a second DAC.

14. The method of claim 13, wherein each output level produced by the first DAC is obtained from a first set of current sources, and each output level produced by the second DAC is obtained from a second set of current sources.

15. The method of claim 9;

wherein said generating a digitally encoded first periodic signal comprises generating a Gray-coded first periodic signal;

wherein said generating a digitally encoded second periodic signal comprises generating a Gray-coded second periodic signal; and

wherein said generating a digitally encoded third periodic signal comprises generating a Gray-coded third periodic signal.

16. The method of claim 15;

wherein said converting the digitally encoded first periodic signal is performed by a first DAC; and

wherein said converting the digitally encoded second periodic signal and said converting the digitally encoded third periodic signal is performed by a second DAC.

17. The method of claim 16;

wherein each output level produced by the first DAC is obtained from a first set of current sources, and each output level produced by the second DAC is obtained from a second set of current sources; and

wherein the output levels for each respective DAC are Gray-coded.

18. The method of claim 9, wherein the second signal is substantially shaped like a sine wave.

19. The method of claim 9, wherein said generating a fourth signal comprises generating a sine wave signal.

20. The method of claim 9, wherein said generating a fifth signal comprises generating a cosine wave signal.